Plant Variety Protection: A path to agricultural development in Kenya

Submitted in partial fulfilment of the requirements of the Bachelor of Laws Degree, Strathmore University Law School

By

Curtis Gachiri Chege

078156

Prepared under the supervision of

Ms. Lillian Makanga

Contents

Declaration

I, CURTIS GACHIRI CHEGE, do hereby declare that this research is my original work and that to the best of my knowledge and belief, it has not been previously, in its entirety or in part, been submitted to any other university for a degree or diploma. Other works cited or referred to are accordingly acknowledged.

Signed: .....

Date: .....

This dissertation has been submitted for examination with my approval as University Supervisor.

Signed:.....

MS. LILLIAN MAKANGA

Acknowledgments

I am eternally grateful for my parents for their unending love and support.

I am entirely thankful for my supervisor Ms Lillian Makanga for her guidance and patience.

I would also like to acknowledge everyone who has been instrumental to my research.

Dedication

To my sister, Christine.

List of Abbreviations

IP Intellectual Property

IPR Intellectual Property Right

PVP Plant Variety Protection

PBR Plant Breeder Rights

CBD Conservation of Biological Diversity

UPOV International Union for the Protection of New Varieties of Plants

TRIPs Agreement on Trade- Related Aspects of Intellectual Property Rights

PVPA Plant Variety Protection Act

PPA Plant Patent Act

FAO Food and Agriculture Organisation

PGRFA Plant Genetic Resources for Food and Agriculture

PLANT VARIETY PROTECTION: A PATH TO AGRICULTURAL DEVELOPMENT IN KENYA

Abstract

Proprietary rights date back to Stone Age in Kenya. Individuals, families, clans and communities have always held a profound, almost divine, attachment to property such as land, cattle, and wives among other things. Communities and societies upheld laws and culture that respected a man's right to his property. However intellectual property is a fairly recent import. The exclusion of others from the expression of an idea or work was introduced globally to protect innovators and inventors from exploitation.

The protection of varieties of plants is particular foreign. Ancient communities subsisted on agriculture and communal labour. Therefore no single individual could be credited with the invention of a plant variety. The growth and exposure to new technologies from industrialised states has influenced the social and legal framework of Kenyan society and created a new market for innovation and exclusionary rights.

This study seeks to address the scope of PVP mechanisms in the Kenyan context. It will seek to clarify the barriers inhibiting this application and how they can be overcome. The study is conducted through literature review of plant variety protection systems and the global obligations Kenya has as a member of several universal agreements.

CHAPTER 1

Background of the Study

Property is commonly thought to be anything that is and can be possessed by a person, whether natural or legal. It can be sold, leased or exploited and these rights are usually enforced by law.[1] There are two types of property namely tangible and intangible property. Tangible property may include fixed property like a house, land or movable property like a vehicle. Intangible property on the other hand is less known or understood and this constitutes Intellectual Property (IP).

The name intellectual property arises from the fact that this property is born from human creativity or even imagination. It is a product of human creation, an idea that can only be protected upon expression.[2] Intellectual property rights are granted and administered by an arm of a government or state(s) with the state reserving the right of eminent domain.[3]

The assignments of IPRs to living things or organic material is a relatively recent development. Vegetative propagated plants were first patented in the US in 1930 while the protection of plant varieties by plant breeder's rights only became widespread later in the 20th century.[4] This resulted from the increased interest of private breeders and investors to protect their intellectual property and bottom line. The canonical farming practice of replanting and exchanging seed from the previous years' crop means that breeders have difficulty in recouping the investments made in improved varieties through repeat sales.

Plant Breeder's Right (PBR) also known as Plant Variety Rights (PVR) is one form of Intellectual Property (IP) that is now recognised and protected worldwide. PBRs empower plant breeders to regulate the use of the protected plant variety which opens up avenues for commercial gain from their investment in the development of new plant varieties.[5] A grower now faces restriction on the use of protected plant varieties. Plant variety protection regimes are meant to accord exclusive rights to the breeders of new varieties of plants, because they invest their intellectual ingenuity, time and money in breeding varieties with improved

[1] S. Blackburn, *Oxford Dictionary of Philosophy,* (1996), Oxford University Press.
[2] L. Bently, B. Sherman, *Intellectual Property Law,* Oxford University Press, Oxford, 19.
[3] L. Bently, B. Sherman, *Intellectual Property Law,* Oxford University Press, Oxford, 19.
[4] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006.
[5] L,J. Butler, & B.W. Marion, *The Impacts of Patent Protection on the US Seed Industry and Public Plant Breeding,* (1985), University of Wisconsin.

qualities.[6] Flowing from such investments, seeds multiplied from these improved varieties are made up with new features such as improved yields, resistance to pests and diseases, and adaptation to extreme environmental conditions.[7]

A protected variety is basically a plant variety for which plant breeder's rights have been granted to the owner of the variety and the variety complies with the internationally recognized standards, i.e. distinctness, uniformity, stability and novelty, and also designated by prescribed variety denominations.

History of seed and plant breeding

Plant breeding can be defined as any attempt by humans to manipulate nature and heredity of plants so as to create a superior quality.[8] The changes made in plants are permanent and heritable. The development of plant varieties occurred over centuries of agricultural endeavour through the exchange of seeds and sharing of knowledge among fellow farmers. This was a gradual process during which plants transformed from independent and wild to dependent on humans and domesticated varieties.[9]

During this period, farmers discovered the most basic plant breeding technique – selection, discriminating among biological variation in a population to identify and pick plants with desirable traits such drought resistant.[10] Modern plant breeding depends on the principles of genetics, the science of heredity to which Gregor Mendel made some of its foundational contributions. Known as the father of genetics, his described how factors for specific traits are transmitted from parents to offspring and through subsequent generations.[11]

The application of genetics in crop improvement has yielded spectacular successes over the years, one of the most notable being the development of dwarf, environmentally responsive cultivars of wheat and rice for the subtropical regions of the world. These new plant materials

---

[6] L, Busch, W.B. Lacey, J. Burkhardt, & L, Lacey, *Plants, Power and Profit,* (1990), Oxford.
[7] Helfer, L.R., *Intellectual Property Rights in Plant Varieties: An Overview with Options for National Governments*, FAO Legal Papers, http://www.fao.org/fileadmin/user_upload/legal/docs/lpo31-2.pdf.
[8] International Food Policy Research Institute, *Green Revolution – Curse or blessing?* IFPRI, Washington, DC. 2002.
[9] L,J. Butler, & B.W. Marion, *The Impacts of Patent Protection on the US Seed Industry and Public Plant Breeding,* (1985), University of Wisconsin
[10] G. Dutfield, *Intellectual Property Rights, Trade and Biodiversity,* (2000), Earthscan Publications Limited, United Kingdom.
[11] Anderson, E. *Man as a maker of new plants and new plant communities*, in: W. Thomas, *Man's Role in Changing the Face of the Earth*, University of Chicago Press, Chicago, 763-777.

transformed food production in these regions in a dramatic fashion, and in the process became dubbed the Green Revolution.[12]

Plant breeder's rights were originally developed as an alternative to patents and were first recognised internationally by the 1961 International Convention for the Protection of New Varieties of Plants Convention (UPOV). It was revised in Geneva in 1972, 1978 and 1991. The Convention established the International Union for the Protection of New Varieties of Plants, an independent intergovernmental body, based in Geneva.

In 1980, the U.S. Supreme Court cleared the way for the Patent Office to grant patents for specific life forms. The case was known as *Diamond v. Chakrabarty*,[13] and in it the Court voted five to four to allow a genetically modified strain of bacteria to be patented because it did not occur in nature. Ananda Chakrabarty was a genetic engineer working for General Electric who had developed a bacterium that was capable of breaking down crude oil. This ruling legally permitted ownership rights living things which is largely viewed as the starting gun towards plant variety protection.

PBRs in Kenya

On May 11th 2016, the International Convention for the Protection of New Varieties of Plants (UPOV Convention) of December 2, 1961, as revised on March 19, 1991 entered into force in Kenya. Kenya was the first country in Africa to join Union Internationale pour la protection des obtentions végétales (UPOV) when it became a member on May 13th 1999 and subsequently domesticated the 1961 Act of the UPOV Convention in the Kenya Seed and Plant Varieties Act.

Plant variety protection (PVP) in Kenya is governed by the Seed and Plant Varieties Act, Cap 326 of the Laws of Kenya of 1972. This Act contains two major sections on seed certification and plant breeder's rights. In the year 1975 the Act became operational for the seed certification section, without the plant breeders rights. However, under the plant breeder's rights, the Act provides for grant of proprietary rights to persons breeding or discovering new varieties of plants.[14]

[12] Anderson, E. *Man as a maker of new plants and new plant communities*, in: W. Thomas, *Man's Role in Changing the Face of the Earth*, University of Chicago Press, Chicago, 763-777.
[13] Sidney A. Diamond, Commissioner of Patents and Trademarks, v. Ananda M. Chakrabarty, et al. 100 S. Ct. 2204.
[14] E. Sikinyi, *Plant Variety Protection (Plant Breeder's Rights) in Kenya*, Konrad Adenauer Stiftung, 2009

The Agreement on Trade- Related Aspects of Intellectual Property Rights (TRIPs) which came into effect on 1 January 1995, is the most comprehensive multilateral agreement on intellectual property negotiated under the World Trade Organization. The TRIPs Agreement sets minimum requirements of Intellectual Property Rights, provides enforcement mechanisms, establishes dispute settlement procedures and provides transitional arrangements.[15] It covers patents including the protection of new varieties of plants.[16]

The Seed and Plant Varieties Act is *sui generis* legislation as envisioned under Article 27 of the TRIPs Agreement which states, "*members shall provide for the protection of plant varieties either by patents or by an effective Sui generis system or by any combination thereof…*". A sui generis system, is one specifically designed to address the needs and concerns of a particular issue, such as Kenya's plant varieties. This system of PVP is also reflected in the UPOV Convention.

Statement of the Problem

The existing legal and institutional framework of Plant Variety Protection is largely dictated by its international agreements and global trends. This may not be effective in catering to Kenya's unique needs as a primarily agrarian economy and may create systemic failures if unchecked.

Research Objectives

1. To critically examine whether the Kenyan legal framework provides a sufficient ground for PVP in Kenya.
2. To critically examine whether the Kenyan institutional framework provides a sufficient ground PVP in Kenya.
3. To propose recommendations that may be necessary for appropriate application of PVP to Kenya's legal structure and economy.

Hypothesis

There is a need for a critical examination of Kenyan legislative and institutional framework on PVPs so as to assess their role in Kenya's future.

[15] G. Dutfield, *Intellectual Property Rights, Trade and Biodiversity,* (2000), Earthscan Publications Limited, United Kingdom.
[16] Article 27(1), *Agreement on Trade-Related Aspects of Intellectual Property Rights*, 1869 UNTS 299, July 2015.

LITERATURE REVIEW

This research work employs a thematic approach in conducting literature review. The topic has been discussed in other jurisdictions since it has been a growing issue of concern in the developing world. These discussions can be broken into a few predominant themes:

1. The meaning and adoption of PVP for developing countries
2. The application of PVP in developing countries
3. The regulation of PVP to strike a balance between plant breeders and farmers

The meaning and adoption of PVP

The introduction of patents or monopoly rights in sub-Saharan African agriculture is difficult to analyse because the experience of OECD countries having introduced plant variety protection does not constitute an appropriate guide. This is due to the fact that present conditions in African agriculture differ markedly from the conditions in Europe when the UPOV convention was first adopted.

Most of the agricultural communities in developing countries lived in communal settings where land was owned communally and plant breeding and general agricultural activities were based on 'technology' passed down from earlier generations.

This is still paramount in developing countries' agriculture given that rural communities still depend on knowledge passed down from earlier generations. This knowledge is often communal and in any case practically impossible to trace back to an individual. The introduction of IPRs, in direct contrast to this system, sought to grant exclusionary right upon an individual.

There have been divergent opinions on the impact of intellectual property in agriculture particularly in developing countries. Some of the IP issues relating to agriculture include Plant Breeder's Rights (PBRs), agriculture biotechnology, and issues relating to access to plant genetic resources (PGRs).

Theoretical Framework

Theories and justifications for intellectual property have been addressed by various western philosophers mainly as an extension of the notion of property. The concept of property is well developed in the western world and is subject to protection under both civil and criminal law in virtually all jurisdictions.[17]

According to the natural rights theory derived from the divergent ideas of Locke and Rosseau, the results of an individual's labour and ideas were part and parcel of his identity and were inalienable.[18] Over time, this theory declined in influence and a more utilitarian one influenced by Bentham took hold. Under the more current utilitarian theory, patent rights are seen as creations by society for the purpose of serving the economic interests of the society as a whole.[19] This theory is premised on incentives and rewards—that creators are encouraged to invent by the promise of a reward in the form of monopoly rights over their creation for a limited amount of time.[20]

Numerous scholars have argued that the upshot of this is that it limits the diffusion of ideas and therefore prevents many people from benefiting from them. Only those who pay the royalties are entitled to use the products of the intellectual efforts.[21]

IP is based on the knowledge economy, on intangible property (ideas) whose infinity is the point of departure from real property. It would follow that under a strong Lockean labour theory "any given appropriation by an individual of an abstract object would be allowed."[22] This framework make it clear that the current IP system is based on the economics theory stemming from the utilitarian justification influenced by Bentham's ideas.

The study is further informed by the African commons theory advanced by Okoth Ogendo in explaining the communal ownership of land and labour in traditional African societies. He posited that the African commons are organised and managed by a social hierarchy in the form of an inverted pyramid with the family at the tip, the clan at the middle, and the community at

[17] L. Bently, B. Sherman, *Intellectual Property Law,* Oxford University Press, Oxford, 19.
[18] Granstrand, O., *The economics and management of intellectual property: towards intellectual capitalism,* Cheltenham, Edward Elgar, 1999.
[19] Granstrand, O., *The economics and management of intellectual property: towards intellectual capitalism,* Cheltenham, Edward Elgar, 1999.
[20] Granstrand, O., *The economics and management of intellectual property: towards intellectual capitalism,* Cheltenham, Edward Elgar, 1999.
[21] Endeshaw, A, *Intellectual property policy for non-industrial* countries, Aldershot, Dartmouth, 1996.
[22] Macpherson, C. *Property: mainstream and critical positions,* Oxford, Basil Blackwell, 1978.

the base. The decision making in each of these levels is done in reference to the internalised communal values and principles.[23] This communal aspect, therefore, has implications on ownership of plant breeds and varieties.

Justification of the Study

Steady development in the PVP sector in Kenya is evident in the last few years. With all the good that that brings, conflicts are inevitable. Conflicts of this nature pose a challenge to our rigid, slow to adapt, legal framework that may have no direct remedies to the upcoming issues that this sector will likely face.

In addition to this, climate change is an ever daunting presence to Kenya's agrarian economy may be partially mitigated through effective legislation on PVPs.

Methodology

The methodological approach applied to this study is critically reviewing the literature on plant variety protection with an added emphasis on developing countries.

Data Collection

Data collection will involve the utilization of both primary and secondary sources of data. Primary sources include statutes relevant to PVP, the Constitution of Kenya, and other international instruments. They will be useful in establishing the legal framework governing the forms of PVP in Kenya vis-a-vis the legal framework in other jurisdictions.

Mostly primary data, such as the Constitution and the relevant statutes will be accessed through their officially publicized sources such as the Kenya Law Review. Thereafter qualitative data collected will be analysed. As for the other publications such as law textbooks and journal articles, they shall be accessed by visiting libraries such as the Strathmore Library. Majority of the material will be accessed online through online libraries such as the Lexis Nexis, JSTOR, Kenya Law, as well as individual publications on the internet.

The secondary used include textbooks, journal articles, media reports, conference papers and the internet/online libraries and visits to the Kenya Plant Health Inspectorate Service (KEPHIS). These will give a detailed picture of PVP in Kenya, and will bring to light the

[23] Okoth-Ogendo, 'The tragic African commons', 2.

practical aspects of the mechanism as well as a detailed appraisal and critique of the legislative and institutional framework.

The study shall also adapt a comparative analysis so as to compare and contrast systems of PVP in Kenya and in other jurisdictions. It will specifically look at South Africa and the United States of America. This is because the USA has embraced PVP for a significantly long period and South Africa has achieved great success with PVP in a short period of time. I will therefore be able to take note of some of its successes as well as challenges. It will finally address the solutions to the challenges that can and have been remedied in the period of its practice.

Data Analysis

The data obtained is qualitative data. The secondary and primary data collected were analysed in light of the research objectives, study of the problem, hypothesis, and the theories behind the topic and the overall justification of the study.

Limitations

1. PVP in Kenya and most developing countries is a fairly recent phenomenon thus there is little room to foresee the potential effects
2. The research design and methodology. The method chosen does not incorporate collection of data on the subject matter. This implies that the study is limited to the aspects of community land and TJS that can be deciphered through qualitative analysis

Chapter Breakdown

Chapter One: Introduction

This chapter provides an introduction to the study, the statement of the problem, the literature review, the objectives and questions, the hypothesis, the conceptual framework and the design methodology of the study.

Chapter Two: PVP in the Kenyan context

This chapter will look at the current state of PVP in Kenya. It will highlight the current state of framework and regulation of ODR.

Chapter Three: Comparative Analysis of PVPs in the United States of America and South Africa

This chapter will pay attention to the current state and ongoing development of PVP in other jurisdictions where it has developed sufficiently enough to highlight its major achievements as

well as its drawbacks. It will derive ideals on the mechanism and determine the viability of their replication or adaptation in Kenya.

Chapter Four: Analysis of PVP regulation in Kenya

This chapter draws the best practices from municipal PVP and those of other jurisdictions. It seeks to establish the features that make PVP an efficient and appropriate property rights regime.

Chapter Five: Conclusions, Findings and Recommendations

This chapter will consider all that has been covered in the study and lay out the findings and recommendations on how to improve the current state of PVP in Kenya.

CHAPTER TWO

PBR in Kenya

Introduction

This chapter examines the current state of IPR for plant varieties in Kenya. It seeks to interrogate whether the existing laws, policies and international agreements promote the protection of PBRs. It looks at the present legislation and policy.

The Constitution of Kenya

The Constitution confirms its supremacy over all other laws in the country.[24] The Constitution, as noted by Lumumba and Franceschi,[25] is the most important part of the basic law of a state and is therefore our first step in enlightening Kenya's position.

The Constitution enshrines the right of every person, either individually or in association with others, to acquire and own property of any description.[26] It also obligates the state with the duty to support, promote and protect the intellectual property rights of the people of Kenya.[27] In addition to this and in consideration of the international agreements signed by Kenya that touch on the subject of GMOs, the Constitution makes it clear that any treaty or convention ratified by Kenya shall form part of the law of Kenya under the Constitution.[28]

Industrial Property Act

In this paper and in the Kenyan context, the Industrial Property Act is the foundational legislation for matters regarding the patentability and ensuing intellectual property rights that are granted by the state.[29] The Industrial Property Act is an act of Parliament to provide for the promotion of inventive and innovative activities, to facilitate the acquisition of technology through the grant and regulation of patents and other certifications.

[24] Article 2(4), Constitution of Kenya (2010).
[25] Lumumba P and Franceschi L, The Constitution of Kenya, 2010: An Introductory Commentary, Strathmore University Press, Nairobi, 2014, 66.
[26] Article 40(1), Constitution of Kenya (2010).
[27] Article 40(5), Constitution of Kenya (2010).
[28] Article 2(6), Constitution of Kenya (2010).
[29] Section 21-29, *Industrial property act,* (Act No. 7 of 2007).

The Act provides that plant varieties as provided under the Seeds and Plant Varieties Act are not patentable. However, the parts of such plants or the products of a biotechnological process may be patentable.[30]

Seed and Plant Varieties Act

The Seed and Plant Varieties Act came into force in 1975.[31] The law aims to: regulate transactions in seeds,[32] including provision for the testing and certification of seeds; provide guidelines for the establishment of an index of names of plant varieties[33] and to empower the imposition of restriction on the introduction of new varieties[34] and control the importation of seeds;[35] provide for the grant of proprietary rights to persons breeding or discovering new varieties.[36] The Act also grants plant breeders in plant variety exclusive rights to produce reproductive material of the variety for commercial purposes.[37]

The Anti Counterfeit Act

The Anti-Counterfeit Act was assented to on December 24th 2008.[38] The Act establishes the Anti-Counterfeit Agency with the mandate to administer anti-counterfeiting policy and law in Kenya.[39] The Agency has three main functions. It enforces the provisions of the Anti-Counterfeit Act, 2008; enlightens and informs the public on counterfeiting issues and combats counterfeiting in Kenya.[40] The Act is viewed as giving law enforcement agencies the required mandate in the fight against the proliferation of counterfeit products in Kenya.

The Act defines counterfeiting as:

"…taking the following actions without the authority of the owner of any intellectual property right subsisting in Kenya or elsewhere in respect of protected goods:

[30] Section 26, *Industrial property act,* (Act No. 7 of 2007).
[31] Cap 326, *Seed and Plant varieties act,* Act No. 53 of 2012.
[32] Section 3, *Seed and Plant varieties act,* Act No. 53 of 2012.
[33] Section 7, *Seed and Plant varieties act,* Act No. 53 of 2012.
[34] Section 8, *Seed and Plant varieties act,* Act No. 53 of 2012.
[35] Section 15, *Seed and Plant varieties act,* Act No. 53 of 2012.
[36] Section 17, *Seed and Plant varieties act,* Act No. 53 of 2012.
[37] Section 20, *Seed and Plant varieties act,* Act No. 53 of 2012.
[38] The Anti-Counterfeit Act, No. 13 of 2008.
[39] Section 3, *the Anti-Counterfeit Act*, No. 13 of 2008.
[40] Section 5, *the Anti-Counterfeit Act*, No. 13 of 2008.

(a) the manufacture, production, packaging, re-packaging, labeling or making, whether in Kenya or elsewhere, of any goods whereby those protected goods are imitated in such manner and to such a degree that those other goods are identical or substantially similar copies of the protected goods;….."[41]

It includes,

"…(b) the manufacture, production or making, whether in Kenya or elsewhere, the subject matter of that intellectual property, or a colorable imitation thereof so that the other goods are calculated to be confused with or to be taken as being the protected goods of the said owner or any goods manufactured, produced or made under his license;

International Framework

Convention of Biological Diversity

The Convention on Biological Diversity (CBD), is a multilateral treaty with three main goals including:[42]

i. the conservation of biological diversity
ii. the sustainable use of biological components
iii. the fair and equitable sharing of benefits arising from genetic resources.

Its objective is to develop national strategies for the conservation and sustainable use of biological diversity.[43] Kenya is a party to the treaty and signed in 1992.[44]

The CBD does not deal specifically with the issue of plant variety protection but is of direct relevance to the setting up of protection regimes for plant varieties since its scope encompasses all biological resources. Generally, it constitutes the central instrument concerning biodiversity at the international level. In this context, it broadly delimits the rights of states and other relevant actors over biological resources. It generally affirms the sovereign rights of states to exploit their own

[41] Section 2, *the Anti-Counterfeit Act*, No. 13 of 2008.
[42] Article 1, *Convention of Biological Diversity*, 1992, I-30619.
[43] https://www.cbd.int/history/
[44] https://www.cbd.int/information/parties.shtml

resources pursuant to their own environmental policies, a direct reflection of the principle of permanent sovereignty over natural resources.[45]

The International Undertaking on Plant Genetic Resources

The International Undertaking was adopted by the Food and Agriculture Organisation (FAO) of the United Nations Conference as a non-binding instrument and is a close relative of the CBD which aims at guaranteeing food security through the conservation, exchange and sustainable use of the world's Plant Genetic Resources for Food and Agriculture (PGRFA), as well as the fair and equitable benefit sharing arising from its use.[46] It was adopted by the FAO Conference in 1983 and 113 states have adhered to it. It affirms the principle that plant genetic resources are a heritage of humankind that should be made available without restriction to anyone.[47]

It contains provisions dealing with the exploration and collection of PGRFA,[48] preservation, evaluation and documentation of PGRFA in situ(conservation sites/areas) and ex situ(gene banks),[49] access to and availability of PGRFA,[50] international cooperation in conservation, exchange and plant breeding,[51] international coordination of gene bank collections and information systems (Article 7), PGRFA conservation and management activities funding.[52] Article 11 requires States to provide information to the FAO at yearly intervals on the measures that they have taken or propose to take to achieve the objectives of the Undertaking.

Unreconciled international interests have hampered implementation of the International Undertaking. These are, on one hand, the interests of the developing countries which have a natural abundance of PGRFA and wish to maintain control over them, and, on the other hand, the interests of the (mostly) developed countries which have made large capital investments in breeding or engineering PGRFA and intend on maintaining control over their products.[53]

---

[45] Article 3, *Convention of Biological Diversity*, 1992, I-30619.
[46] G.L Rose, *The International Undertaking on Plant Genetic Resources for Food and Agriculture: Will the Paper be Worth the Trees?* University of Wollongong, 2004.
[47] Article 1, *the International Undertaking on Plant Genetic Resources for Food and Agriculture*, 1992, 31 I.L.M. 822.
[48] Article 3, *the International Undertaking on Plant Genetic Resources for Food and Agriculture*, 1992, 31 I.L.M. 822.
[49] Article 4, *the International Undertaking on Plant Genetic Resources for Food and Agriculture*, 1992, 31 I.L.M. 822.
[50] Article 5, *the International Undertaking on Plant Genetic Resources for Food and Agriculture*, 1992, 31 I.L.M. 822.
[51] Article 6, *the International Undertaking on Plant Genetic Resources for Food and Agriculture*, 1992, 31 I.L.M. 822.
[52] Article 8, *the International Undertaking on Plant Genetic Resources for Food and Agriculture*, 1992, 31 I.L.M. 822.
[53] G. L. Rose, *The International Undertaking on Plant Genetic Resources for Food And Agriculture: Will the Paper be Worth the Trees?,* University of Wollongong, 2004.

The vague and non-binding nature of the treaty and its lack of an enforcement mechanism have facilitated many of the provisions being simply ignored or breached. For example, establishment of an International Network under Article 7 has been slow and there has been no significant progress under Article 11 in setting up international fund for PGRFA conservation and management outside of existing FAO funds.[54]

International Convention for the Protection of New Varieties of Plants

The convention was adopted in Paris in 1961 and henceforth there was recognition of the intellectual property rights of plant breeders in their varieties on an international basis. It established The International Union for the Protection of New Varieties of Plants (UPOV),[55] an intergovernmental organization with legal personality and which has its headquarters in Geneva, Switzerland. The UPOV Convention has been amended three times since it came into force in 1968.[56] While the first two amendments of UPOV, in 1972 and 1978, kept the basic structure almost unchanged, the last amendment in 1991 introduced far reaching changes to the structure of protection, significantly strengthening PBRs.[57] The government of Kenya acceded to the revised 1999 UPOV convention on April 1999.

The UPOV Convention provides a *sui generis* form of intellectual property protection which has been specifically adapted for the process of plant breeding and has been developed with the aim of encouraging breeders to develop new varieties of plants. The members of the Union undertake to grant plant breeders' rights in respect of new plant varieties in accordance with the principles established in the UPOV Convention and thus on an internationally harmonized basis.

The UPOV Convention established for members of the Union a legal framework with the following key features:

- common agreement on the essential notions of variety and breeder[58]

[54] G. L. Rose, *The International Undertaking on Plant Genetic Resources for Food And Agriculture: Will the Paper be Worth the Trees?,* University of Wollongong, 2004

[55] The acronym UPOV is derived from the French name of the organization, which is "Union Internationale pour la Protection des Obtentions Végétales."

[56] B. De Jonge, *Plant Variety Protection in Sub-Saharan Africa: Balancing Commercial and Smallholder Farmers' Interests*, Canadian Centre of Science and Education Vol. 7, No. 3, 2014.

[57] B. De Jonge, *Plant Variety Protection in Sub-Saharan Africa: Balancing Commercial and Smallholder Farmers' Interests*, Canadian Centre of Science and Education Vol. 7, No. 3, 2014.

[58] Article 1, *the International Convention for the Protection of New Varieties of Plants,* 1991.

- genera and species to be protected[59]
- rules for national treatment and priority, which establish relations between members of the Union and provide for the legal mechanism for nationals and residents of a member to benefit from protection in the territories of other members[60]
- the conditions for the grant of protection: novelty, distinctness, uniformity and stability and a suitable variety denomination[61]
- a minimum scope of protection[62]
- a minimum duration of protection[63]
- grounds to nullify or cancel the breeder's right.[64]

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

Adopted in 1994 as a treaty administered by the World Trade Organization (WTO), TRIPs is the first and only IPR treaty that seeks to establish universal, minimum standards of protection across the major fields of intellectual property, including patents, copyrights, trademarks, industrial designs, integrated circuits and trade secrets.[65] Although the TRIPs devotes only minimal attention to plant variety protection and does not even mention the UPOV convention, its adoption has done more to encourage the legal protection of plant varieties than any other international agreement or legal instrument.

TRIPs' influence on plant variety protection stems from the following sources:

- its link to other international trade agreements
- its widespread adherence by states in both the industrialized and developing world
- its novel enforcement, review and dispute settlement provisions
- the requirement in TRIPs article 27.3(b) that its signatories must provide protection for plant varieties "either by patents or by an effective sui generis system or by any combination thereof"

[59] Article 3, *the International Convention for the Protection of New Varieties of Plants,* 1991.
[60] Article 4, *the International Convention for the Protection of New Varieties of Plants,* 1991.
[61] Article 5, *the International Convention for the Protection of New Varieties of Plants,* 1991.
[62] Article 14, *the International Convention for the Protection of New Varieties of Plants,* 1991.
[63] Article 19, *the International Convention for the Protection of New Varieties of Plants,* 1991.
[64] Article 21 & 22, *the International Convention for the Protection of New Varieties of Plants,* 1991.
[65] P Cullet, *Plant variety protection in Africa: Towards Compliance with the TRIPs Agreement*, Journal of African Law, 45, 2001.

- a formal review of article 27.3(b) which was scheduled to be held in 1999.

Sui Generis Systems for Plant Variety Protection

To begin with, *Sui generis* is a Latin phrase, meaning of its (his, her, or their) own kind or in a class by itself.[66] In law it is used when a special and unique interpretation of a case or authority is found to be necessary.

One concern arising from implementation of the TRIPs is its impact on farming communities. In particular, the meaning of four words in Article 27.3(b) – 'effective sui generis system' – for plant variety protection. This means WTO member state can create municipal legislation unique to their own needs that *effectively* adopts the provisions of the TRIPs Agreement.

Arusha Protocol for the Protection of New Varieties of Plants

The Arusha protocol was adopted by member states, including Kenya, of African Regional Intellectual Property Organization (ARIPO) for the protection of new varieties of plants. The Protocol seeks to provide Member States with a regional plant variety protection system that recognizes the need to provide growers and farmers with improved varieties of plants in order to ensure sustainable agricultural production. Four Member States signed the Protocol on its adoption thus coming into force under Article 40 of the protocol.[67] The protocol therefore forms part of Kenyan law under article 2 of the 2010 constitution.

Institutional Framework

Kenya Plant Health Inspectorate Service (KEPHIS)

KEPHIS is a government parastatal whose responsibility is to assure the quality of agricultural inputs and produce to prevent adverse impact on the economy, the environment and human health.[68] It was established by the Kenya Plant Health Inspectorate Service Act. The act provides for certain function with regards to plant variety protection and among them include:

i. regulate matters relating to plant protection, seeds and plant varieties[69]

---

[66] S. Blackburn, *Oxford Dictionary of Philosophy,* (1996), Oxford University Press.
[67] Article 40 (3) of the Arusha Protocol states;
"*This Protocol shall come into force twelve months after four States have deposited their instruments of ratification or accession*."
[68] http://www.kephis.org/
[69] Article 5(a), *the Kenya Plant Health Inspectorate Service Act*, 2011.

ii. support the administration and enforcement of food safety measures[70]

iii. be the principal advisor to the Government on issues relating to seeds and planting material[71]

iv. implement plant variety protection in Kenya, administer plant breeders' rights and maintain the Plant Breeders' Rights Register[72]

v. undertake plant variety testing and description, seed certification and plant quarantine control[73]

vi. register and license seed merchants, seed growers, agents and any other person who may be required to be registered under the provisions of this Act or any of the laws specified in the First Schedule[74]

vii. enter into association with such other bodies or organizations or authorized persons as the Board may consider desirable or appropriate in furtherance of the purposes for which the Service is established,[75] and

viii. be the liaison office for international conventions relating to plant variety protection, plant protection, seed certification and dealing with endangered species or any other related conventions[76]

[70] Article 5(c), *the Kenya Plant Health Inspectorate Service Act*, 2011.
[71] Article 5(e), *the Kenya Plant Health Inspectorate Service Act*, 2011.
[72] Article 5(f)*, the Kenya Plant Health Inspectorate Service Act*, 2011.
[73] Article 5(h), *the Kenya Plant Health Inspectorate Service Act*, 2011.
[74] Article 5(m), *the Kenya Plant Health Inspectorate Service Act*, 2011.
[75] Article 5(n), *the Kenya Plant Health Inspectorate Service Act*, 2011.
[76] Article 5(o), *the Kenya Plant Health Inspectorate Service Act*, 2011.

CHAPTER 3

Comparative Analysis of PVP in USA and South Africa

Introduction

This chapter aims at identifying and analysing the underlying legal framework and the application of PVP systems in South Africa and the USA. The choice of South Africa as a comparative template owes to the fact that the country, like Kenya, is in the development phase in terms of its implementation of PVP. At the same time, it is in the process of enacting legislation and enforcement mechanisms that aim at accommodating PVP within the country.

This chapter will analyse the legal and institutional framework in place in South Africa. It will also look at various platforms supporting PVP such as the Southern African Development Community (SADC), an inter-governmental organization headquartered in Gaborone, Botswana. South Africa has and continues to face similar challenges as Kenya regarding its implementation of PBRs and its effect on large and small scale farmers.[77]

Like Kenya, South Africa is a member of the Union for the Protection of New Varieties of Plants through its 1978 Act, in fact they are the only two African member states. With a well-established seed market, a science and technology-based plant-breeding sector and its commercial agricultural sector that bears the features of developed countries, South Africa has an elaborate legislation on plant variety protection which conforms to the international norms in the subject.[78]

The United States of America was one of the primary scientific engines of plant breeding and variation. The basis for federal patent law was created in the United States Constitution which has been in operation since 1789. The US Constitution states,

"*Congress shall have the power … to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries*."[79]

---

[77] Marcelin T. Mahop, *Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes,* Bio-Science Law Review, 2014.
[78] Marcelin T. Mahop, *Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes,* Bio-Science Law Review, 2014.
[79] Article 1, section 8, clause 8 of the US Constitution.

The USA gave breeders their first set of rights in the Plant Patents Act of 1930. But this Act had a limited coverage with only asexually propagated plants (plants not normally sown from seeds) included, which was intended to exclude the major food species and thus to prevent the emergence of grain monopolies. The Plant Patents Act gave impetus to the process of acceptance of IPR in agriculture by a larger set of countries with two factors moving the process forwards, eventually to UPOV.

Despite being the first country to introduce IPRs in agriculture, the USA did not become a party to the 1961 UPOV Convention. Until 1970, when the USA introduced its Plant Varieties Protection Act, PBR was seen, at best, as a West European phenomenon. This chapter will look at the United States' legal and institutional approach to PBRs and glean applicable lessons for Kenya as a developing country.

Plant Variety Protection in South Africa

Plant Breeder Rights Act

The principal law governing the protection of plant breeders' rights in South Africa is the Plant Breeders' Rights Act No 15 of 1976 which has been amended several times, the most recent amendment being the Plant Breeders' Amendment Act No 673 of 1996. As stated earlier, South Africa is one of only two African member states of UPOV. This act borrows heavily from the provisions of the UPOV convention.

The Plant Breeders' Rights Amendment Act No 673 of 1996 provides that the Act shall apply to every variety of any prescribed kind of plant if it is new, distinct, uniform and stable.[80] It is therefore reasonable to say that the Act applies to varieties that have been bred by conventional means as well as varieties that have been genetically modified.[81] Applications for the grant of plant breeders' rights may be submitted by the breeder of a protectable variety as defined in section 2 of the Act, who may be a citizen or is domiciled in the Republic or a Convention country.[82]

[80] Section 3, *Plant Breeders' Rights Amendments Act,* No 673 of 1996 of South Africa.
[81] Marcelin T. Mahop, *Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes,* Bio-Science Law Review, 2014.
[82] Section 6, *Plant Breeders' Rights Amendments Act,* No 673 of 1996 of South Africa.

If granted, the rights conferred by the plant breeders' certificate are tenable for a period of 25 years in the case of vines and trees and for 20 years in the case of all other species,[83] subject to payment of appropriate annual maintenance fees, maintenance of the variety and a guarantee that the propagating material is always available.[84]

The act provides that the authorisation of the breeder is required for anyone wishing to undertake the following acts in respect of the protected variety: production or reproduction; conditioning for the purpose of propagation; sale or any other form of marketing; exporting, importing and stocking for any of the purposes mentioned herein.[85] The rights of plant breeders extend to harvested materials, including plants which may be obtained through unauthorised use of the propagating material of the relevant variety.[86]

Furthermore, the 1996 Amendment Act has extended the rights of breeders over varieties which are essentially derived from the protected variety where the protected variety is not itself a derived variety.[87] The introduction of the extension to essentially derived varieties strengthens PBRs, because it entitles breeders of a specific original registered variety with some royalties from any other subsequent variety sufficiently similar that might have been derived by breeding from the original. This provision is also said to incentivise breeding of new varieties, and to discourage minor changes or cosmetic breeding based on protected varieties.[88]

The rights conferred on the breeder of a new variety of plant are not absolute. The act provides for exceptions such as the use of propagating material for the purposes of bona fide research, and the use of propagating material for private or non-commercial purposes.[89]

The farmer's privilege exemption stipulates that breeders' rights shall extend to the acts performed by a farmer who on land occupied by him or her uses harvested material obtained on such land from that propagating material for purposes of propagation, provided that harvested material

[83] Section 21, *Plant Breeders' Rights Amendments Act,* No 673 of 1996 of South Africa.
[84] Section 22, *Plant Breeders' Rights Amendments Act,* No 673 of 1996 of South Africa.
[85] Section 23, *Plant Breeders' Rights Amendments Act*, No 673 of 1996 of South Africa.
[86] Section 23(2), *Plant Breeders' Rights Amendments Act*, No 673 of 1996 of South Africa.
[87] Section 23 (4), *Plant Breeders' Rights Amendments Act,* No 673 of 1996 of South Africa.
[88] Marcelin T. Mahop, *Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes,* Bio-Science Law Review, 2014
[89] Section 23(6) (d) and (e), *Plant Breeders' Rights Amendments Act*, No 673 of 1996 of South Africa.

obtained from the replanted material shall not be used for purposes of propagation by any person other than that farmer.[90]

With regard to the patentability of plant varieties, the South African Patents Act No 57 of 1978 excludes plants and animal varieties and essentially biological processes from eligible subject-matters for patent protection. However, because microbiological processes and the products derived from those processes are patentable, new varieties of plants in the form of GMOs are patentable in South Africa.[91]

Plant Variety Protection in USA

Protection of plant varieties in the United States is achieved under three different but related statutory schemes: a utility patent,[92] the Plant Patent Act,[93] and the Plant Variety Protection Act.[94] These three forms of protection differ in examination considerations and the scope of rights granted.

The Plant Patent Act

The Plant Patent Act (PPA)[95] was first enacted in 1930 and was perhaps the first formal protection for plant varieties in the world. However, it was fairly limited and has remained so throughout the past 76 years.[96] Its provisions afford protection only for new plant varieties that have been asexually reproduced by methods such as cutting, budding, grafting, and tissue culturing.

A further limitation of the Plant Patent Act is that protection does not extend to tuber-propagated plants such as Irish potatoes.[97]

---

[90] Section 23(6)(f), *Plant Breeders' Rights Amendments Act*, No 673 of 1996 of South Africa.
[91] Marcelin T. Mahop, *Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes,* Bio-Science Law Review, 2014
[92] U.S. Code Title 35, section 101
[93] U.S. Code Title 35, Sections 161 & 164
[94] U.S. Code Title 7, sections 2321 & 2401
[95] U.S Code Title 35
[96] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006
[97] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006

It protects a single plant having a common characteristic and the clones of that plant. To obtain a plant patent, however, the plant breeder must have actually carried out the asexual reproduction of the plant variety in question.

Thus, the plant patent protects the inventor's right to exclude others from 'asexually reproducing', selling, or using the plant so reproduced, or any of its parts through the United States, or from importing the plant asexually reproduced, or any of it parts thereof. If a plant is "discovered", it must have been found in a cultivated area to be protectable under the PPA.[98]

Obtaining a plant patent in the United States is relatively simple. In amending title 35 of the United States Code to provide for plant patents, Congress did not require plant patents to meet the requirements pertaining to the description of the invention that apply to utility patents. As a consequence, a written description in a plant patent application is acceptable if it is "as complete as reasonably possible".[99]

The Plant Variety Protection Act

The Plant Variety Protection Act (PVPA) was originally signed into law in 1970, and later amended in 1994. This act is a voluntary program that provides patent-like rights to breeders, developers, and owners of plant varieties. The amended act also added protection to potatoes and other tuber crops.[100]

The PVPA is a *sui generis* type protection, consistent with the 1991 Act of the UPOV. The PVPA provides for a 20-year protection period from the date a breeder's certificate is granted for most varieties and a 25-year protection period for trees and vines. The PVPA is administered by the Department of Agriculture rather than the Patent and Trademark Office.[101] Under the PVPA, all seed-bearing plants are eligible for protection.

[98] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006.
[99] U.S Code Title 35, Section 162.
[100] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006.
[101] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006.

The breeder has the right to prevent others from producing or reproducing the protected variety,[102] conditioning the variety for propagation purposes, offering to sell, market, import, export, or to stock the protected variety.

To receive a breeder's right, a breeder must invent a plant variety that is new, distinct, uniform and stable. Under the PVPA, however, the breeder's authorisation to use the protected plant varieties for non-commercial or experimental acts or acts done for the purposes of breeding new plant varieties is generally not required. The PVPA also permits farmers to save seed for replanting under some limited circumstances.[103]

Utility Patents

The utility patent is technology neutral and the same statutory standards that apply to any patent are applied to utility patents to plants. Under general patent law, subject-matter which may be protected by a utility patent is limited to "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof".[104]

Until 1980, this statutory provision was interpreted by the US Patent and Trademark Office (USPTO) as generally excluding inventions involving living matter from protection by utility patents. However, in 1980, this traditional line of thought was overturned, when the United States Supreme Court decided that living things were indeed patentable subject-matter.[105]

It took until 1985 for a breeder who could have obtained protection under the PVPA, to test the proposition that such plant varieties were patentable under general patent law. That year, the US Patent and Trademark Office's Board of Patent Appeals and Interferences ruled that seeds, plant tissue cultures, and indeed the plant itself, of a corn (maize) variety were patentable subject-matter under the utility patent statute.[106] As a consequence, plants and their parts could now also be protected by utility patents.

[102] U.S Code Title 7, Section 2541.
[103] U.S Code Title 7, Section 2543.
[104] U.S Code Title 35, Section 101
[105] *Diamond v. Chakrabarty*, 447 U.S. 303 (1980)
[106] *Ex Parte Hibberd*, 227 USPQ 443 (PTO Bd. Pat. App. & Int. 1985).

The Supreme Court put an end to any remaining debate in 2001 when it held that newly developed plant varieties fall within the scope of section 101 of the Patent Act, and that neither the PPA nor PVPA limit this coverage.[107]

Generally, a utility patent is granted for a 20-year period from the date of filing. It grants the right to exclude others from making, using, selling, offering for sale and importing the patented plant in the United States.[108] A utility patent provides a great deal of flexibility in protecting the plant. It is possible to protect a class of plant varieties with a novel trait, plant parts, and methods of producing or using plant varieties.[109]

The utility patent is the most comprehensive means of protecting a plant-related invention. This is due to the great flexibility available to an inventor in the manner in which he can claim the invention. In addition, in the field of plant related inventions, there are no statutory exemptions to the exclusive rights granted by a utility patent.[110] On the other hand, this type of protection is the most difficult to obtain, because the criteria of patentability are the same as those applied to inventions in any other field of technology.

These statutory criteria include utility, novelty, and non-obviousness. Also, the description of the invention must contain a disclosure of how the invention can be made and used, and must set forth the best mode contemplated by the inventor at the time the patent application is filed.[111]

Conclusion

The various methods by which plant varieties may be protected in the United States work together to ensure that plant breeders' innovations receive protection and can be effectively enforced. This illustrates how a highly industrialized country has taken measures to incentivize innovation in agriculture.

---

[107] *J.E.M. Ag Supply v. Pioneer Hi-Bred Int'l*, 534 U.S. 124 (2001).
[108] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006
[109] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006
[110] Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review, 1 November 2006
[111] U.S Code Title 35, Sections 101-103

The PVP regime in South Africa, which adopted PBRs much later than the USA uses similar requirement criteria in granting exclusion rights to breeders. It is clear that they share similar motivation in protecting breeders however South Africa as a developing countries has extended its breeder rights for originally registered breeds to allow for royalties to be paid to the breeder for any variation on the original.

South Africa has also imposed added obligations on plant breeders to guarantee the availability of their breeds on the market to discourage monopolistic activity such as hoarding.

CHAPTER 4

PVP in Kenya

Introduction

This chapter will attempt to reconcile the various aspects of PVP that have been discussed in previous chapters with the unique needs for agricultural innovation and food security in Kenya. It will also navigate the various regulations and red tape involved in the process of plant breeding and variety protection.

It is critical to this study that Kenya's obligations locally to its plant breeders and farmers are balanced with its international obligations as outlined in various treaties and agreements which she is signatory to.

This chapter will also highlight the potential benefits and pitfalls which may be met in Kenya's journey towards recognition and implementation of PVPs, and will attempt to forecast the place of plant breeding in Kenya's social and economic future.

Operation of PVP in Kenya

The current law governing plant variety protection in Kenya is the Seeds and Plant Varieties Act of 1972 that entered into force in 1975. The Act was revised in 1978 and 1991 in a bid to take into account changing trends in international standards relating to plants and seeds. As recently as in 2012, there has been a further revision of the Seeds and Plant Varieties Act with the enactment of the Seeds and Plant Varieties (Amendment) Act in 2012, believed to have been an attempt to bring Kenya's plant breeders' rights law into conformity with the 1991 Act of UPOV.[112]

Kenya has chosen to protect the rights of plant breeders by this form of *sui generis* intellectual property device, with a domestic plant breeders' rights law. The Seeds and Plant Varieties Act creates the Kenyan Plant Health Inspectorate Services ('KEPHIS') as a corporate body to administer the Act. KEPHIS was established in 1996 as the competent authority to receive and grant applications for plant variety protection through the Plant Variety Protection Office.

[112] Marcelin T. Mahop, *Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes,* Bio-Science Law Review, 2014

Application for Protection in Kenya

Under the current PVP regime in Kenya, there are specific laid down conditions that must be fulfilled in respect of the applicant and the plant variety to which the application relates.

The Seeds and Plant Varieties Act states that an applicant for plant breeders' rights must be the person who bred or discovered the plant variety concerned, or his successor in title.[113] The discovery dimension marks one of the major differences between the PBRs and the patents system, in that one of the fundamental principles of patent law is in the protection of inventions, not discoveries.[114]

For an applicant for plant breeders' rights to be granted protection over a plant variety, the variety must comply with the rules prescribed under Schedule Four, Part II of the Act. The variety shall be:

- *sufficiently distinguishable by one or more important morphological, physiological or other characteristics from any other variety whose existence is a matter of common knowledge at the time of the application, whatever may have been the origin, artificial or natural, of the initial variation from which it resulted;*
- *sufficiently varietal pure;*
- *sufficiently uniform or homogenous having regard to the particular features of its sexual reproduction or vegetative propagation;*
- *stable in its essential characteristics, that is to say, it must remain true to its description after repeated reproduction or propagation or, where the application prescribes a particular cycle of reproduction or multiplication, at the end of each cycle.*

The period for exercising plant breeders' rights shall not exceed 20 years, for all types of crops except in respect of trees and vines where the said period shall be twenty-five years from the date of the grant.[115] For the rest of the crops, the period should not be less than 15 years. This period commences on the day that the grant of the plant breeders' rights takes effect.[116]

[113] Section 18, Seeds and Plant Varieties Act 1975, Cap 326, Laws of Kenya
[114] Section 22-26, Industrial Property Act No. 7 of 2007, Cap 509, Laws of Kenya
[115] Section 19, *Seed and Plant varieties act, Act* No. 53 of 2012.
[116] Section 19, *Seed and Plant varieties act, Act* No. 53 of 2012.

There is provision for cancellation of plant breeders' rights, the responsibility for such a cancellation falling under the authority of the minister. This can occur if the minister[117] is satisfied that information submitted in the application for the grant of the rights, by the applicant or on behalf of the applicant in connection with the application, was incorrect, or if facts have been discovered which, if known before the grant, would have resulted in the grant being refused on the grounds that it did not meet conditions for protection.[118]

The holder of plant breeders' rights in a new plant variety shall have the exclusive right to do, and to authorise others to do, the following:[119]

(a) production or reproduction[120]
(b) conditioning for the purpose of Propagation[121]
(c) offering for sale[122]
(d) selling or other marketing[123]
(e) exporting[124]
(f) importing[125]
(g) stock the variety for any of the above purposes[126]

The Seeds and Plant Varieties Act provides for an important exemption to the exercise of plant breeders' rights, which can be viewed as a private and non-commercial use exemption. The Act stipulates that in so far as the production and stocking for production of the propagating material for which plant breeders' rights have been granted is undertaken solely for research purposes or for developing new varieties in the breeder's own nursery, this shall not be deemed to be at variance with the exclusive right of the holder of a plant breeder's rights.[127]

[117] "Minister" means the Minister for the time being responsible for matters relating to Agriculture, Section 2, Seeds and Plant Varieties Act 1975, Cap 326, Laws of Kenya.
[118] Section 19, *Seed and Plant varieties act, Act* No. 53 of 2012.
[119] Section 20, *Seed and Plant varieties act, Act* No. 53 of 2012.
[120] Section 20(a), *Seed and Plant varieties act,* Act No. 53 of 2012.
[121] Section 20(b), *Seed and Plant varieties act,* Act No. 53 of 2012.
[122] Section 20 (c), *Seed and Plant varieties act,* Act No. 53 of 2012.
[123] Section 20 (d), *Seed and Plant varieties act,* Act No. 53 of 2012.
[124] Section 20 (e), *Seed and Plant varieties act,* Act No. 53 of 2012.
[125] Section 20(f), *Seed and Plant varieties act,* Act No. 53 of 2012.
[126] Section 20(g), *Seed and Plant varieties act,* Act No. 53 of 2012.
[127] Section 20(1A), Seeds and Plant Varieties Act 1975, Cap 326, Laws of Kenya

The regulatory framework for plant variety protection in Kenya follows the system of first to apply, first to be given the PBRs over the new plant variety in question. Furthermore, applicants for plant breeders' rights in Kenya are able to claim priority over their application of PBRs if they can provide evidence that a first application for PBRs has been made within 12 months, over the same new variety of plants in another UPOV member country.[128]

The application for plant breeders' rights is submitted, together with a completed technical questionnaire,[129] to the Managing Director of KEPHIS, who is the Authorized Officer for the purposes of the Act.[130] The application is then examined by KEPHIS and if it is satisfied that the variety complies with the requirements of the Seeds and Plant Varieties Act, and that the plant material is as described in the technical questionnaire through a growing test of the variety, the right is granted.

Farmers Rights vs Plant Breeders' Rights

In the history of agricultural production, up until the twentieth century, seed collection and distribution resided in the hands of farmers. Farmers collected the seeds from their fields after harvest and then used them for the next crop, for feed, for exchange, and for the breeding of new varieties of crops.[131] Farmers collected the seeds from their fields after harvest and then used them for the next crop, for feed, for exchange, and for the breeding of new varieties of crops.[132]

Commercial globalization has induced a transformation in agricultural practices by imposing a legal framework designed to take account of the contributions of scientific innovations in plant breeding, however this same framework proves ill equipped to take account of the collective contributions of farmers that have served as the groundwork of biodiversity, production and innovation.[133]

---

[128] http://www.kephis.org/services-topmenu-29/plant-variety-protectiontopmenu-30/plant-breeders-rights-legislation-topmenu-43.html?start=2

[129] http://www.kephis.org/images/stories/pdf_files/plant_breeders_rightsii.pdf

[130] http://www.kephis.org/services-topmenu-29/plant-variety-protectiontopmenu-30/plant-breeders-rights-legislation-topmenu-43.html?start=3

[131] C. Borowiak, *Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds*, Politics & Society, Volume 32 No 4, December 2004.

[132] EH. Buttel, & J. Belsky, *Biotechnology, Plant Breeding, and Intellectual Property: Social and Ethical Dimensions*, (1987), Science, Technology and Human Values, Issue 1, at 31- 49.

[133] C. Borowiak, *Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds*, Politics & Society, Volume 32 No 4, December 2004.

Practices that were uncontested for the longest time now need a special "right" to prescribe both what farmers can and cannot legally do, particularly save next for the next planting season. This occurred in 1991, when the 1978 UPOV was revised to restrict farmer exemptions. In particular, it restricted the right of farmers to use engineered seeds as breeding material in their own fields.[134]

In developing countries like Kenya, informal systems of seed distribution dominate formal, commercial seed distribution.[135] In these systems, seed saving and seed sharing are key. The informal system of farmer-to-farmer trading of saved seeds accounted for more than 80 percent of crops cultivated in developing countries.[136]

The idea of farmers' rights came up in the early 1980s as a countermove to the increased demand for plant breeders' rights, as voiced in international negotiations. The subject matter of farmers' rights are first and foremost traditional crop varieties.[137] In 1989, farmers' rights were for the first time formally recognized by the FAO Conference.

Then the Convention on Biological Diversity was adopted in May 1992, and with it a resolution on the interrelationship between the CBD and the promotion of sustainable agriculture. Under the CBD 1992, Article 8 (j) and related provisions, mandates Contracting Parties, as far as possible and as appropriate, subject to their national legislation, to…

"respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices."[138]

This led to the adoption of the Global Plan for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture International Technical Conference on Plant

[134] Article 14, paragraph 2 of the 1994 UPOV Convention states that:
"*In respect of harvested material, including entire plants and parts of plants, obtained through the unauthorized use of propagating material of the protected variety shall require the authorization of the breeder."*
[135] R. Andersen, *The History of Farmers' Rights: A Guide to Central Documents and Literature,* FNI Report 8/2005
[136] C. Borowiak, *Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds*, Politics & Society, Volume 32 No 4, December 2004
[137] J.C Jenkins, & S J Scanlan, *Food Security in Less Developed Countries, 1970 to 1990*, (2001), American Sociological Review, Volume 66.
[138] Article 8 (j), The Conservation of Biological Diversity 1992

Genetic Resources in 2001. Under this treaty, governments were to protect and promote farmers' rights, but could choose the measures to do so according to their own needs and priorities.

In Kenya, the 2012 Seeds and Plant Varieties (Amendments) Act makes provision for farmers' privilege to save, exchange and sell seeds from proprietary varieties.[139] The same provision requests the minister to make regulations governing farmer's privilege in the use of protected varieties.

Benefits of PVP in Kenya

The Agricultural sector is the backbone of the national economy, given that the economy is basically agrarian followed by services then industry. Agriculture contributes over 26% directly to the GDP and over 70% of the export earnings.[140] Over 70% of the population are rural and over 70 % of labour is either in Agriculture or agricultural related activities.[141]

There are a number of International research centres based in Kenya that work with the local institutions in variety development including the Kenya Agricultural Research Institute (KARI), for food crops, horticultural crops, industrial crops, pasture and fodder crops; the Kenya Forestry Research Institute (KEFRI) for trees; and commodity research institutions such as the Coffee Research Foundation (CRF), the Pyrethrum Board of Kenya (PBK) among others.[142]

Similarly there are local and international private seed companies that have their research units breeding or developing new varieties that are candidates for protection.

As of mid-2008, local (Kenyan) breeders had submitted close to 45 % (372) of the total PVP applications, while 55 % (566) were from foreign applicants.[143] Of the local applications 322 out of 372 are from public institutions while private institutions have 50 applications. Local applications are dominated by cereals and industrial crops and pulses. [144]

Kenya's burgeoning PVP regime has led to increased investment in breeding and commercialisation of new varieties. Mainly, in physical facilities and technology in the private

[139] Article 17(d), Seeds and Plant Varieties (Amendments) Act, No. 53 of 2012
[140] https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html
[141] https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html
[142] E. Sikinyi, *Plant Variety Protection (Plant Breeder's Rights) in Kenya*, Konrad Adenauer Stiftung, 2009
[143] E. Sikinyi, *Plant Variety Protection (Plant Breeder's Rights) in Kenya*, Konrad Adenauer Stiftung, 2009
[144] E. Sikinyi, *Plant Variety Protection (Plant Breeder's Rights) in Kenya*, Konrad Adenauer Stiftung, 2009

sector. In contrast to private breeding institutions, investment has decreased in public institutions, especially in land acreages and financial allocations. Also there has been increased activity in capacity building, funding, germplasm exchange and commercialisation of foreign varieties in Kenya.

Conclusion

This Chapter has been an incorporation of the accounts of Chapter Two and Chapter Three in determining the place of PVP in Kenya. It analyses the role of the law, institutions and the current international framework. It addresses the benefits and challenges that can arise out of granting plant breeder rights in Kenya. Considering the above, the next chapter will seek to finally address the question as to PVP has been a success in the Kenyan context.

CHAPTER FIVE

Conclusions and Recommendations

Introduction

This chapter outlines the findings, recommendations and conclusions of the study. The study was undertaken with the intention of examining the PVP framework in Kenya against the international framework and determine its feasibility as a lower middle income country.

Findings

The State of PVP in Kenya

The study has arrived at the finding, in Chapter One, that PVP is recognised by the Constitution and is actively operational in Kenyan legal framework. Kenya has acceded to the major universal agreements that regulate PVP thus forming part of its laws.

The Suitability of PVP in Kenyan agriculture

The study has established in Chapter Four that PVP are an appropriate form of IP recognition and enforcement in plant breeding. PVP affords Kenya the opportunity to join the global market for improved plant varieties under TRIPs. It also incentivises innovation in the agricultural sector in the production of both food and cash crops. This basically kills two birds with one stone by strengthening Kenya's economy as well as aiding in food security.

Possible risks

Despite the bright future PVP promises, this study indicates in chapter 4 the risk of small scale farmers being left out of the "agricultural revolution" mainly due to the issue of seed saving. Farmers in developing countries are particularly affected by prohibitions on seed saving. In the case of patented varieties, farmers are not supposed to replant saved seeds.

In practice, however, most small farmers in African countries will be able to carry on the practice of saving seeds because litigation with millions of small farmers by seed companies is simply not feasible. But the yield of saved seeds is clearly much lower even in later years.

Recommendations

Kenya and indeed other developing countries should heavily invest in sensitisation and education of small scale and subsistence farmers on the process of plant variation and the added benefits of planting seeds with superior variations in them. Subsistence farmers, the back bone of Lower income economies, can greatly enhance the quality and quantity of the annual yields as seen in the Asian "green revolution".

Developing countries must also consider providing subsidised higher learning in fields of plant variation which more technical. This will encourage students to take up a case that could revolutionise agricultural production in Kenya as well as significantly mitigate the effects of climate change of which agrarian economies are most vulnerable.

The Legislature must debate and enact broader "farmer's privilege" regulations, even if temporarily, that will permit farmers participate in seed saving and sharing that can lead to beneficial plant variation.

BIBLIOGRAPHY

Books

1. S. Blackburn, *Oxford Dictionary of Philosophy,* (1996), Oxford University Press.
2. L. Bently, B. Sherman, *Intellectual Property Law,* Oxford University Press, Oxford
3. L, Busch, W.B. Lacey, J. Burkhardt, & L, Lacey, Plants, Power and Profit, (1990), Oxford
4. G. Dutfield, *Intellectual Property Rights, Trade and Biodiversity,* (2000), Earthscan Publications Limited, United Kingdom.
5. Granstrand, O., *The economics and management of intellectual property: towards intellectual capitalism,* Cheltenham, Edward Elgar, 1999.
6. Endeshaw, A, *Intellectual property policy for non-industrial* countries, Aldershot, Dartmouth, 1996.
7. Macpherson, C. *Property: mainstream and critical positions,* Oxford, Basil Blackwell, 1978.
8. Lumumba P and Franceschi L, *the Constitution of Kenya, 2010: An Introductory Commentary*, Strathmore University Press, Nairobi, 2014.

Statutes and International Agreements

1. Constitution of Kenya (2010).
2. Industrial property act, Act No. 7 of 2007.
3. Seed and Plant varieties act, Act No. 53 of 2012.
4. The Anti-Counterfeit Act, No. 13 of 2008.
5. Agreement on Trade-Related Aspects of Intellectual Property Rights, 1869 UNTS 299, July 2015.
6. Convention of Biological Diversity, 1992, I-30619.
7. The International Undertaking on Plant Genetic Resources for Food and Agriculture, 1992, 31 I.L.M. 822.
8. The International Convention for the Protection of New Varieties of Plants, 1991
9. Arusha Protocol for the Protection of New Varieties of Plants, 2015
10. The Kenya Plant Health Inspectorate Service Act, 2011
11. Plant Breeders' Rights Amendments Act, No 673 of 1996 of South Africa.
12. U.S. Code Title 35
13. U.S. Code Title 7

Article and Conference Papers

1. Karen M. Hauda, *Evolution of Plant Variety Protection and Patent Claims in the United States*, Bio-Science Law Review
2. L,J. Butler, & B.W. Marion, *The Impacts of Patent Protection on the US Seed Industry and Public Plant Breeding,* (1985), University of Wisconsin
3. Helfer, L.R., *Intellectual Property Rights in Plant Varieties: An Overview with Options for National Governments*, FAO Legal Papers, http://www.fao.org/fileadmin/user_upload/legal/docs/lpo31-2.pdf.
4. International Food Policy Research Institute, *Green Revolution – Curse or blessing?* IFPRI, Washington, DC. 2002.
5. Anderson, E. *Man as a maker of new plants and new plant communities*, in: W. Thomas, *Man's Role in Changing the Face of the Earth*, University of Chicago Press, Chicago
6. E. Sikinyi, *Plant Variety Protection (Plant Breeder's Rights) in Kenya*, Konrad Adenauer Stiftung.
7. Okoth-Ogendo, 'The tragic African commons'
8. G.L Rose, *The International Undertaking on Plant Genetic Resources for Food and Agriculture: Will the Paper be Worth the Trees?* University of Wollongong, 2004.
9. B. De Jonge, *Plant Variety Protection in Sub-Saharan Africa: Balancing Commercial and Smallholder Farmers' Interests*, Canadian Centre of Science and Education.
10. P Cullet, *Plant variety protection in Africa: Towards Compliance with the TRIPs Agreement*, Journal of African Law
11. Marcelin T. Mahop, *Intellectual Property Protection of New Varieties of Plants in Sub-Saharan Africa: Overview of Existing Regimes,* Bio-Science Law Review, 2014
12. C. Borowiak, *Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds*, Politics & Society, Volume 32 No 4
13. E H. Buttel, & J. Belsky, *Biotechnology, Plant Breeding, and Intellectual Property: Social and Ethical Dimensions*, (1987), Technology and Human Values
14. R. Andersen, *The History of Farmers' Rights: A Guide to Central Documents and Literature,* FNI Report 8/2005
15. J.C Jenkins, & S J Scanlan, *Food Security in Less Developed Countries, 1970 to 1990*, (2001), American Sociological Review